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TA-F4A

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AEP Model
(Up to Serial No. 501,500)
(Serial No. 501,501 and later)

Canadian Model
UK Model
E Model

INTEGRATED STEREO AMPLIFIER

SPECIFICATIONS

GENERAL

Power Requirements:
Type I: 220 V ac (or 120 V ac by internal rewiring), 50/60 Hz
Type II: 240 V ac, 50/60 Hz
Type III: 110, 120, 220 or 240 V ac adjustable, 50/60 Hz

Power Consumption:
Type I and III: 170W
Type II: 230W

Dimensions:
Approx. 410 (w) x 145 (h) x 310 (d) mm
16 3/16 (w) x 5 3/4 (h) x 12 1/4 (d) inches
including projecting parts and controls

Weight:
Approx. 7.2 kg, 15 lb 14 oz (net)
9 kg, 19 lb 14 oz (in shipping carton)

Type I: AEP, Canadian model
Type II: UK model
Type III: E model

AMPLIFIER SECTION

Continuous RMS Power Output:
(Less than 0.3% THD, both channels driven simultaneously)
At 1 kHz
40 + 40W (8Ω)
At 20 Hz–20 kHz
40 + 40W (8Ω)
According to DIN 45500
45 + 45W (8Ω)

Power Bandwidth: 5 Hz–35 kHz, IHF

Harmonic Distortion: Less than 0.3% at rated output
Less than 0.1% at 1W output

– Continued on next page –

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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Intermodulation (IM) Distortion: (60 Hz:7 kHz = 4:1)
Less than 0.3% at rated output
Less than 0.1% at 1W output

Frequency Response:
PHONO RIAA equalization curve ±0.3 dB
TUNER, AUX, TAPE 1, TAPE 2, (REC/PB): 5 Hz–100 kHz ±0.5 dB

Residual Noise: Less than 300μV (8Ω, Network A)

Damping Factor: 35 (8Ω, 1 kHz)

Inputs:

	Sensitivity	Impedance	Maximum input capability (0.2% distortion)	S/N (weighting network, input level)
PHONO	2.5 mV (–50 dB)	50 kΩ	150 mV (–14.5 dB)	80 dB (A, 2.5 mV)
TUNER AUX TAPE 1 TAPE 2 (REC/PB)	150 mV (–14.5 dB)	50 kΩ		100 dB (A, 150 mV)

Outputs:

	Output level	Impedance
REC OUT 1	150 mV (–14.5 dB)	4.7 kΩ
REC/PB	17 mV (–33 dB)	82 kΩ
HEADPHONES	Accepts low and high impedance headphones	
SPEAKER	Accepts speakers of 8–16Ω	

Tone Controls:
BASS ±10 dB at 60 Hz (turnover frequency 300 Hz)
TREBLE ±10 dB at 25 kHz (turnover frequency 5 kHz)

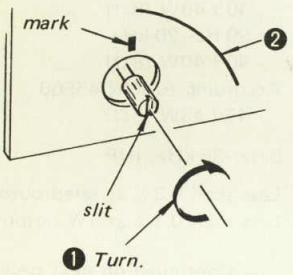
Filters:
LOW 6 dB/oct below 15 Hz
HIGH 6 dB/oct above 9 kHz

0 dB = 0.775V

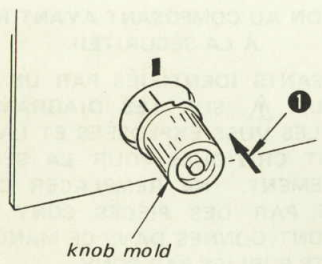
SECTION 1
OUTLINE

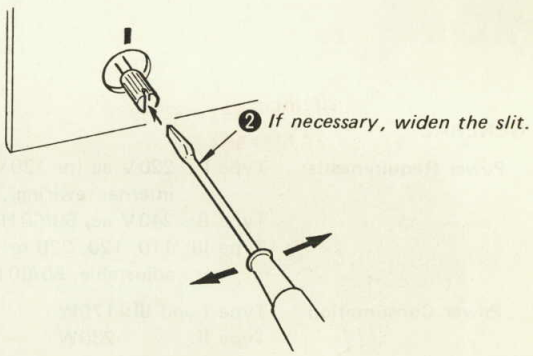
1-1. SERVICING NOTE

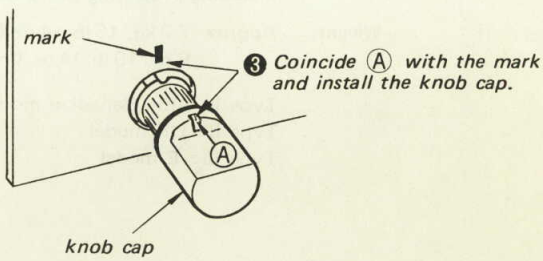
When replacing a knob (SPEAKERS / TREBLE / BASS/BALANCE/FILTER/TAPE COPY/MONITOR/ FUNCTION), prepare a knob cap (4-854-266-00) and a knob mold (4-854-267-00).
Installation of the knob is as follows.



Knob	Mark Position
SPEAKERS	A
TREBLE	-10
BASS	-10
BALANCE	Center
FILTER	OFF
TAPE COPY	SOURCE
MONITOR	SOURCE
FUNCTION	AUX







Part No.	Description
X-4854-213-1	Knob Ass'y
including;	
4-854-266-00	Cap, knob
4-854-267-00	Mold, knob

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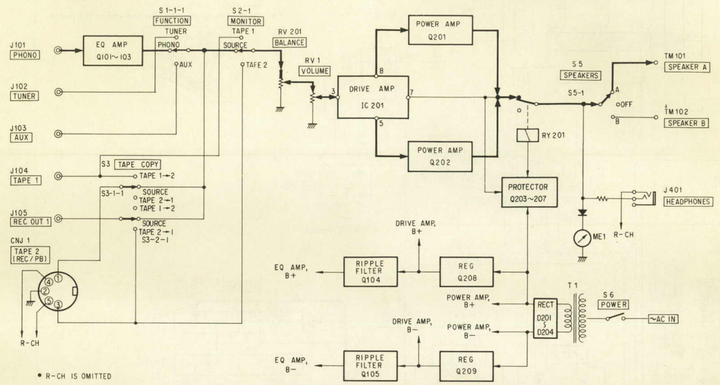
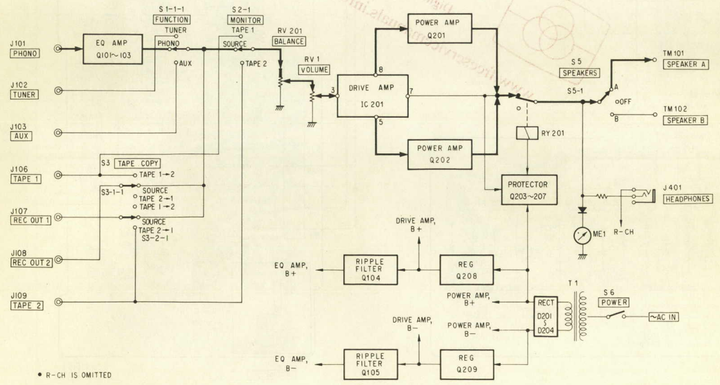
1-2. BLOCK DIAGRAM – AEP, E, UK Model –



– Canadian Model –



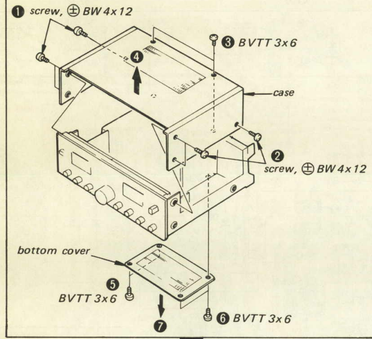
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

CASE AND BOTTOM COVER REMOVAL

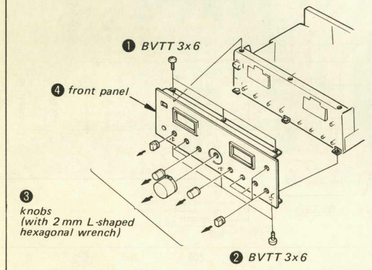
Case: ❶ to ❹
The component side of the speaker board and main amp board can be checked.
Both side of the EQ amp board can be checked.

Bottom Cover: ❺ to ❼
The conductor side of the main amp board can be checked.



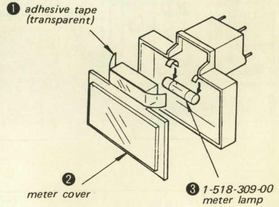
FRONT PANEL REMOVAL

The POWER switch, meters and variable resistors can be replaced, after removing the front panel.



METER LAMP REPLACEMENT

Note: To obtain the same brightness of meter lamps, replace both lamps (L-CH and R-CH) together with new ones.



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SECTION 3 ADJUSTMENT

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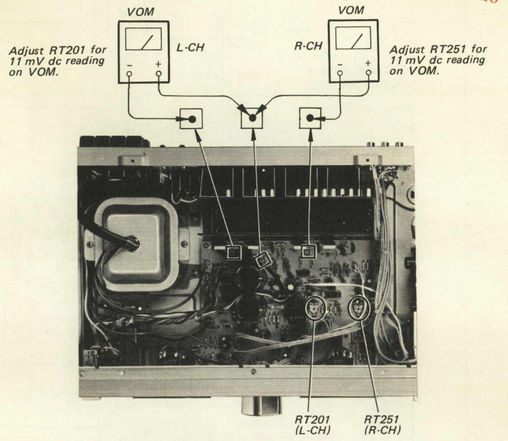
DC Bias Adjustment

Note: 1. Perform adjustments a few minutes passed after POWER switch turned ON.
2. With no signal input.



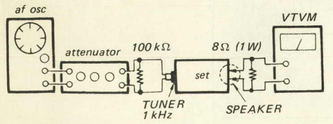
Meter Level Adjustment

Setting:

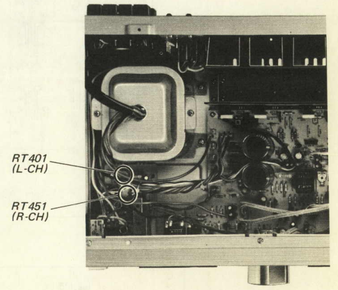
VOLUME control: maximum

Procedure:

1.



2. Adjust attenuator for 2.83V (1W) reading on VTVM.
3. Adjust RT401 (L-CH) and RT451 (R-CH) so that meters indicate 1W.



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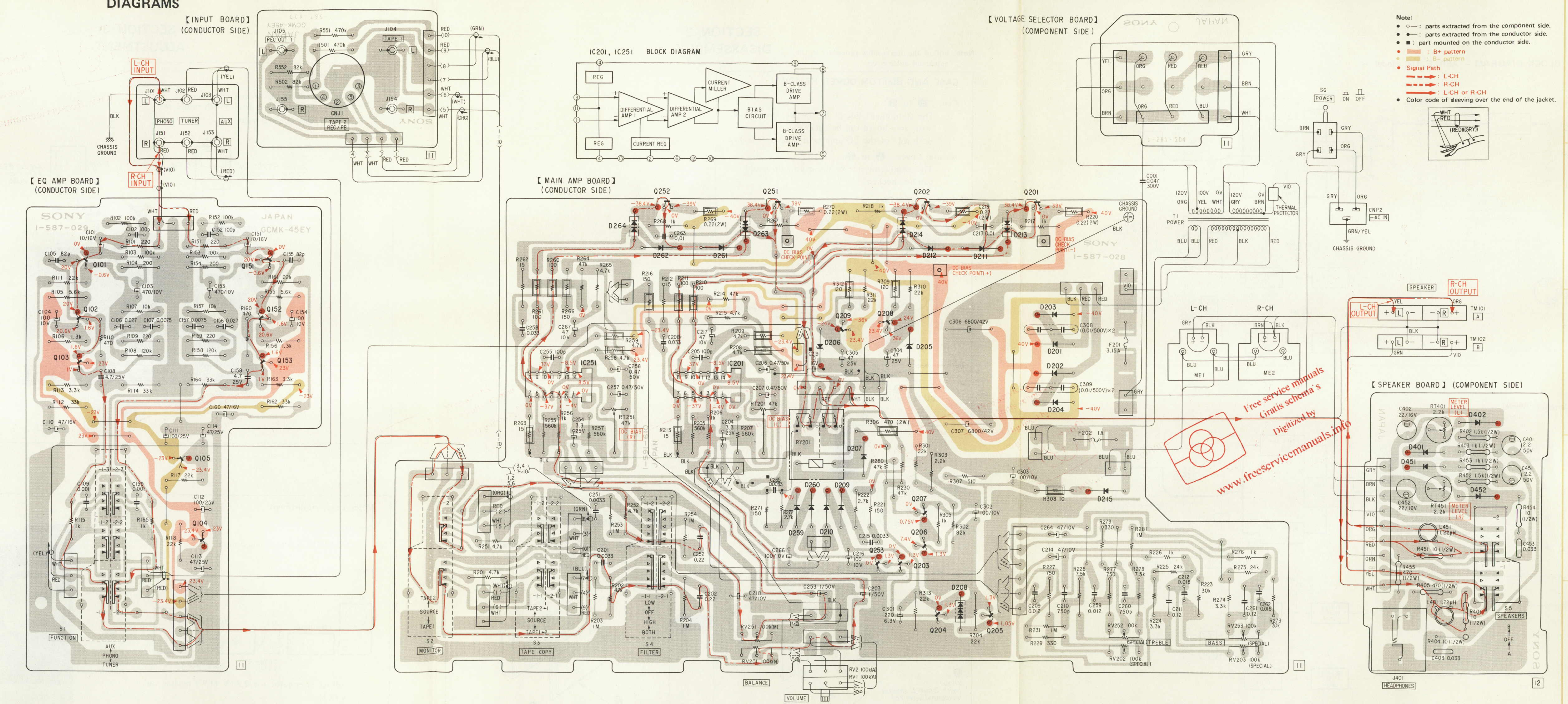
SECTION 4 DIAGRAMS

4-1. MOUNTING DIAGRAM — AEP Model *(Up to Serial No. 501,500)* —



Q	101 102,103; 105; 104; 151 152,153; 252; 251; 209; 208; 253; 203; 202 207 206 204; 205; 201
IC	IC251; IC201
D	264; 262; 261; 263; 206; 259 260 210 209; 207; 214 205; 212; 208; 211; 213; 203,201 202,204; 215; 401 451; 402 452

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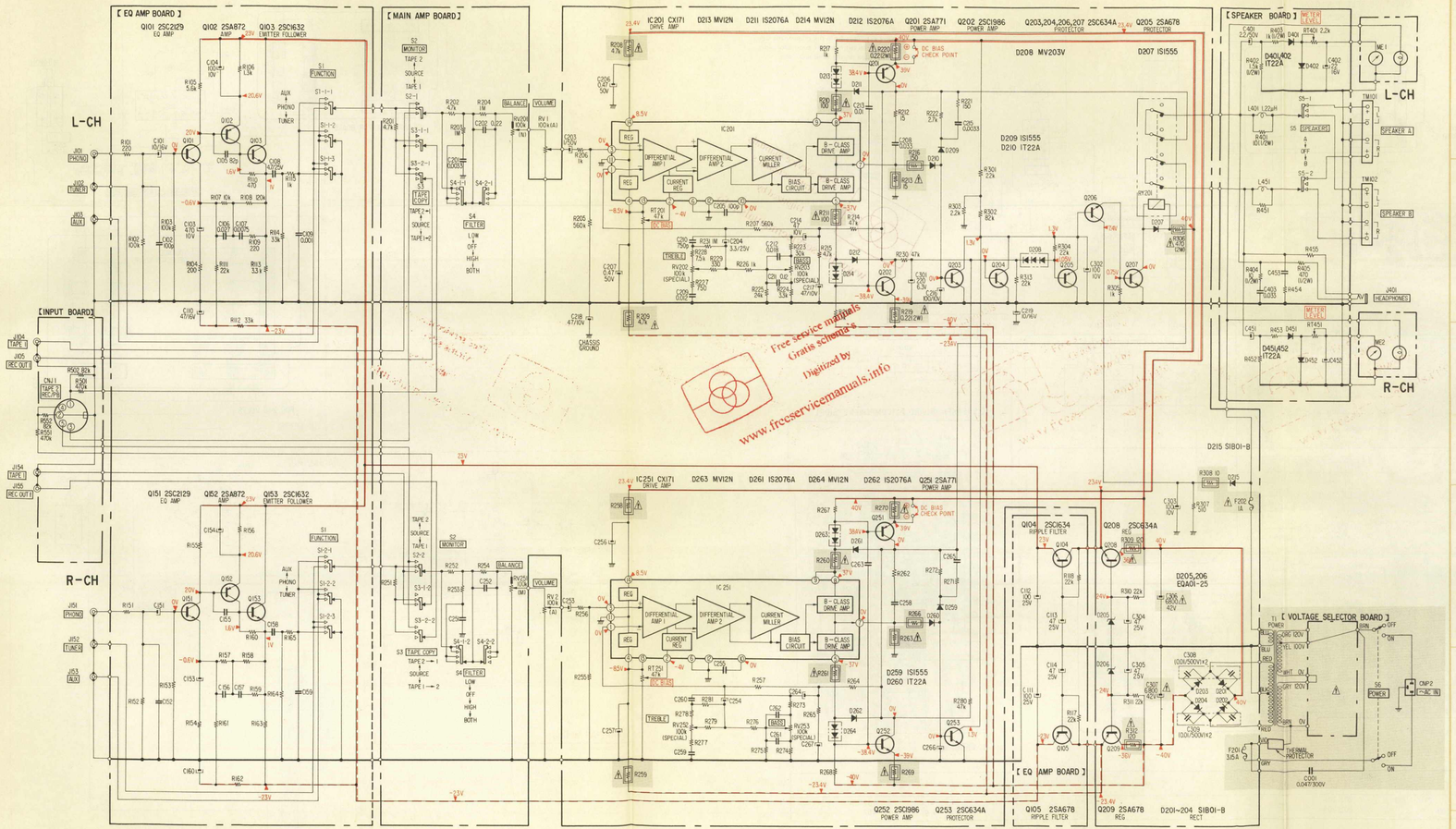


Note: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

Note:

- Components for right channel have same values as for left channel.
- All capacitors are in μF unless otherwise noted. pF = μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ = 1000Ω, MΩ = 1000 kΩ
- All adjustable resistors have characteristic curve B, unless otherwise noted.
- ⚠ : nonflammable resistor.
- : B+ bus.
- : panel designation.
- : adjustment for repair.
- : B– bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S1-1-1–3	FUNCTION	PHONO
S1-2-1–3		TUNER
S2-1, 2	MONITOR	SOURCE
S3-1-1, 2	TAPE COPY	SOURCE
S3-2-1, 2		TAPE 2 → 1
S4-1-1, 2	FILTER	OFF
S4-2-1, 2		HIGH
S5-1, 2	SPEAKERS	A
S6	POWER	OFF

Replacement Semiconductors

For replacement, use semiconductors except in ( ).

Q103, 153: 2SC1632
Q104: 2SC1634
Q203, 204
Q206–208
Q253 : 2SC1364 (2SC634A)

Q102, 152: 2SA872-E (2SA872)

Q105
Q205, 209 : 2SA1027R (2SA678)

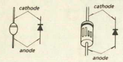
Q201, 251: 2SA771

Q101, 151: 2SC2129

Q202, 252: 2SC1986-D-O (2SC1986)

IC201, 251: CX171

D201–204
D215 : U05G (SIB01-B)



D207, 209
D259 : 1S1555
D210, 260 : 1T22AM (1T22A)
D402, 452
D211, 261 : 1S2076A
D212, 262

D205
D206 : EQB01-25 (EQA01-25)

D208: MV203V

D213, 263
D214, 264 : MV12N

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4-3. MOUNTING DIAGRAM — AEP Model *(Serial No. 501,501 and later)*, Canadian, UK, E Model —

Q / IC	101 102,103	105	104	151 152,153	IC251	252	IC201	251	209	208 203	253	202 207 206	204	205	201			
D	266	264	262	261 216	263	206 209 210 260 259	207	214 205	212	208	211	213	203,201 202,204	215	401 451	402 452		

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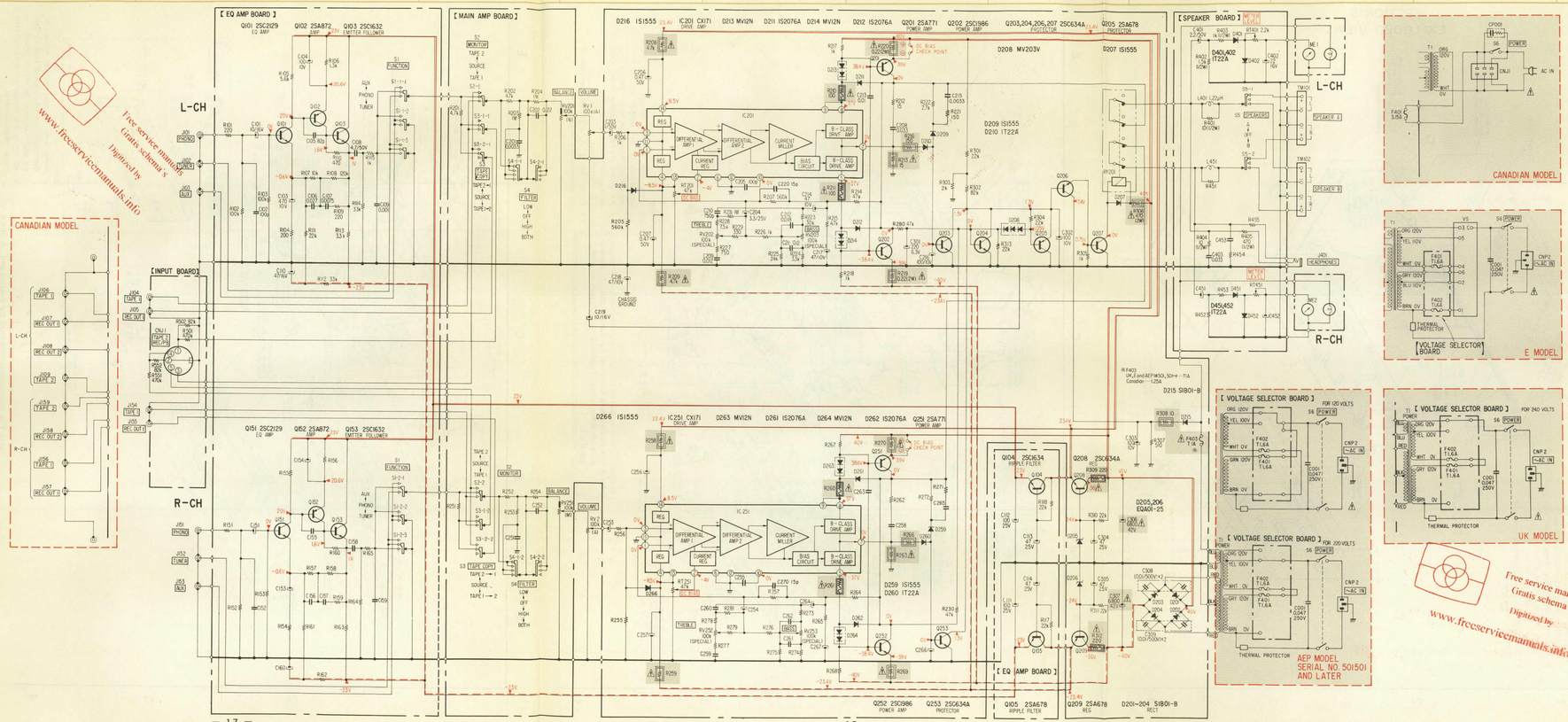
21/7/2014



Note: The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

Note:
- Components for right channel have same values as for left channel.
- All capacitors are in μF unless otherwise noted. pF = μμF. 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ = 1000Ω, MΩ = 1000 kΩ
- All adjustable resistors have characteristic curve B, unless otherwise noted.
- ⚠ : nonflammable resistor.
- ▬▬ : B+ bus.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- ▬▬ : B− bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S1-1-1–3	FUNCTION	PHONO
S1-2-1–3		SOURCE
S2-1, 2	MONITOR	SOURCE
S3-1-1, 2	TAPE COPY	SOURCE
S3-2-1, 2		A
S4-1-1, 2	FILTER	OFF
S4-2-1, 2		
S5-1, 2	SPEAKERS	A
S6	POWER	OFF

Replacement Semiconductors

For replacement, use semiconductors except in ( ).

Q103, 153: 2SC1632
Q104: 2SC1634
Q203, 204
Q206–208
Q253 : 2SC1364 (2SC634A)

Q102, 152: 2SA872-E (2SA872)

Q105
Q205, 209 : 2SA1027R (2SA678)

Q201, 251: 2SA771

Q101, 151: 2SC2129

Q202, 252: 2SC1986-D-O (2SC1986)

IC201, 251: CX171

D201–204
D215 : U05G (SIB01-B)

D208: MV203V

D207, 209
D216, 266
D259
D210, 260
D401, 451
D402, 452
D211, 261
D212, 262 : 1S1555

D205
D206 : EQA01-25 (EQA01-25)

D207, 209
D216, 266
D259
D210, 260
D401, 451
D402, 452
D211, 261
D212, 262 : 1T22AM (1T22A)

D207, 209
D216, 266
D259
D210, 260
D401, 451
D402, 452
D211, 261
D212, 262 : 1S2076A

D213, 263
D214, 264 : MV12N

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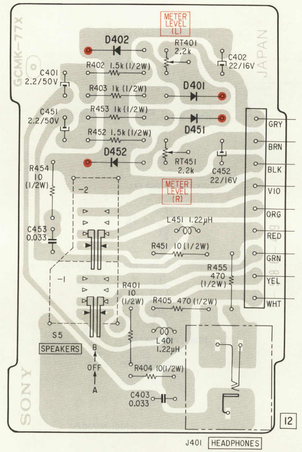
4-5. MOUNTING DIAGRAM – Speaker Board –

– Conductor Side –



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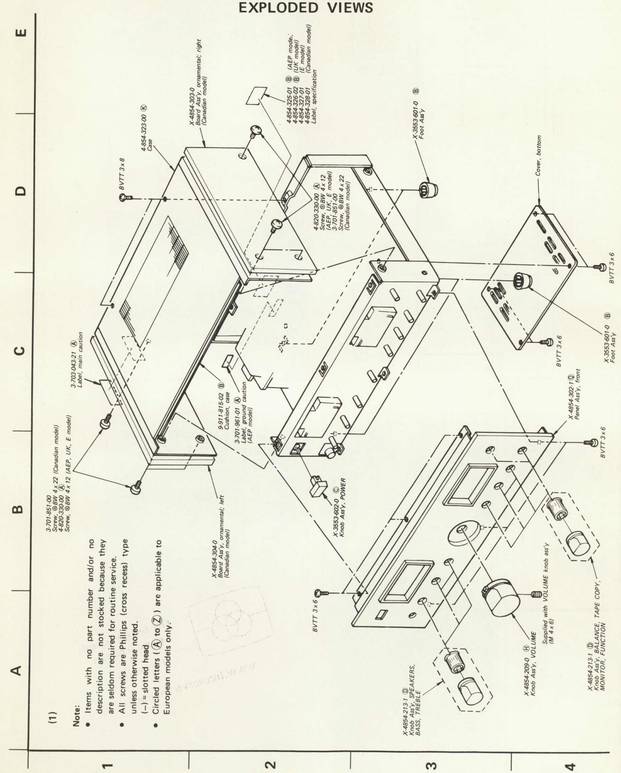
SECTION 5
EXPLODED VIEWS


(1)
Note:
• Items with no part number and/or no description are not stocked because they are seldom required for routine service.
• All screws are Phillips (cross recess) type unless otherwise noted.
• Circled letters (Ⓐ to Ⓩ) are applicable to European models only.
3-701-851-50 Screw, tapping 4 x 22 (Canadian model)
3-701-851-60 Screw, tapping 4 x 12 (AEP, UK, E model)
3-702-043-21 Label, main caution
4-654-223-00 Case
4-654-320-01 Bracket, ornamental; right (Canadian model)
4-654-320-02 Bracket, ornamental; left (Canadian model)
4-654-320-03 Bracket, ornamental; right (AEP, UK, E model)
4-654-320-04 Bracket, ornamental; left (AEP, UK, E model)
4-654-326-01 Label, identification
4-654-326-02 Label, identification
4-654-326-03 Label, identification
4-654-326-04 Label, identification
4-654-326-05 Label, identification
4-654-326-06 Label, identification
4-654-326-07 Label, identification
4-654-326-08 Label, identification
4-654-326-09 Label, identification
4-654-326-10 Label, identification
4-654-326-11 Label, identification
4-654-326-12 Label, identification
4-654-326-13 Label, identification

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SECTION 6
ELECTRICAL PARTS LIST

Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.		Description
SEMICONDUCTORS			
Transistors			
Q101,151	8-729-612-92	Ⓑ	2SC2129
⇒Q102,152	8-729-387-28	Ⓑ	2SA872-E
⇒Q103,153	8-729-665-47	Ⓑ	2SC1632
⇒Q104	8-729-663-47	Ⓑ	2SC1364
⇒Q105	8-729-612-77	Ⓑ	2SA1027R
Q201,251	8-729-171-00	Ⓗ	2SA771
⇒Q202,252	8-729-308-72	Ⓓ	2SC1986D-0
⇒Q203,253 ⇒Q204	8-729-663-47	Ⓑ	2SC1364
⇒Q205	8-729-612-77	Ⓑ	2SA1027R
⇒Q206–208	8-729-663-47	Ⓑ	2SC1364
⇒Q209	8-729-612-77	Ⓑ	2SA1027R
ICs			
IC201,251	8-751-710-00	H	CX171
Diodes			
⇒D201–204	8-719-911-55	Ⓒ	UO5G
⇒D205,206	8-719-931-25	Ⓑ	EQB01-25
D207	8-719-815-55	Ⓑ	1S1555
D208	8-719-920-30	Ⓑ	MV203V
D209,259	8-719-815-55	Ⓑ	1S1555
⇒D210,260	8-719-422-21	Ⓑ	1T22AM
D211,261 D212,262	8-719-923-76	Ⓑ	1S2076A
D213,263 D214,264	8-719-912-00	Ⓑ	MV12N
⇒D215	8-719-911-55	Ⓒ	UO5G
D216,266	8-719-815-55	Ⓑ	1S1555 [AEP (Serial No. 501,501 and later), UK, E and Canadian model]
⇒D401,451 ⇒D402,452	8-719-422-21	Ⓑ	1T22AM

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.		Description
CAPACITORS			
All capacitors are in μF and electrolytic unless otherwise noted. 50WV or less are not indicated except for electrolytics. p: μμF			
C001	⚠1-108-749-12	Ⓑ	0.047 300V mylar [AEP model (Up to Serial No. 501,500)]
C001	⚠1-130-159-11	Ⓒ	0.047 250V film [AEP (Serial No. 501,501 and later), UK, E and Canadian model]
C101,151	1-121-651-11	Ⓑ	10 16V
C102,152	1-102-973-11	Ⓑ	100p
C103,153	1-123-310-00	Ⓑ	470 10V
C104,154	1-121-414-11	Ⓑ	100 10V
C105,155	1-102-971-11	Ⓐ	82p ceramic
C106,156	1-108-359-12	Ⓑ	0.027 mylar
C107,157	1-108-576-12	Ⓑ	0.0075 mylar
C108,158	1-123-232-11	Ⓑ	4.7 50V (nonpolarized)
C109,159	1-108-227-12	Ⓐ	0.001 mylar
C110,160	1-121-409-11	Ⓑ	47 16V
C111,112	1-123-333-00	Ⓑ	100 25V
C113,114	1-121-410-11	Ⓑ	47 25V
C201,251	1-108-232-12	Ⓐ	0.0033 mylar
C202,252	1-108-254-12	Ⓑ	0.22 mylar
C203,253	1-121-391-11	Ⓑ	1 50V
C204,254	1-121-392-11	Ⓑ	3.3 25V
C205,255	1-102-973-11	Ⓐ	100p ceramic
C206,256 C207,257	1-121-726-11	Ⓑ	0.47 50V
C208,258	1-108-244-12	Ⓑ	0.033 mylar
C209,259	1-108-357-12	Ⓐ	0.012 mylar
C210,260	1-104-074-11	Ⓑ	750p polystyrol
C211,261	1-108-363-12	Ⓑ	0.12 mylar
C212,262	1-108-358-12	Ⓐ	0.018 mylar
C213,263	1-108-239-12	Ⓐ	0.01 mylar
C214,264	1-121-409-11	Ⓑ	47 10V
C215,265	1-108-232-12	Ⓐ	0.0033 mylar

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Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.				Description
C216,266	1-121-414-11	Ⓑ	100	10 V	
C217,267 C218	1-121-409-11	Ⓑ	47	10 V	
C219	1-121-651-11	Ⓑ	10	16 V	[AEP, UK model]
C220,270	1-102-951-21	Ⓐ	15 p		ceramic [AEP, UK model]
C301	1-123-296-00	Ⓑ	220	6.3 V	
C302,303	1-121-414-11	Ⓑ	100	10 V	
C304,305	1-121-410-11	Ⓑ	47	25 V	
C306,307	⚠1-125-157-11	Ⓕ	6800	42 V	
C308,309	1-102-355-11	Ⓑ	0.01+0.01	500 V	ceramic
C401,451	1-121-450-11	Ⓑ	2.2	50 V	
C402,452	1-121-479-11	Ⓑ	22	16 V	
C403,453	1-108-244-12	Ⓑ	0.033		mylar

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted.
Refer to the list on page 19 for their parts numbers.
Check schematic diagram for values.
k: 1000 Ω

Ref. No.	Part No.				Description
R208,258 R209,259	⚠1-211-559-11	Ⓐ	4.7 k	¼W	carbon (nonflammable)
R210,260 R211,261	⚠1-211-522-00	Ⓐ	100	¼W	carbon (nonflammable) [AEP model (Up to Serial No. 501,500)]
R210,260 R211,261	⚠1-217-399-00	Ⓑ	100	¼W	fusible [AEP (Serial No. 501,501 and later), UK, E and Canadian model]
R213,263	⚠1-211-502-11	Ⓐ	15	¼W	carbon (nonflammable)
R216,266	⚠1-211-526-11	Ⓐ	150	¼W	carbon (nonflammable)
R219,269 R220,270	⚠1-217-151-11	Ⓑ	0.22	2W	wirewound (nonflammable)
R306	⚠1-206-656-11	Ⓐ	470	2W	metal oxide (nonflammable)
R308	⚠1-211-498-11	Ⓐ	10	¼W	carbon (nonflammable)
R309,312	⚠1-211-524-00	Ⓐ	220	¼W	carbon (nonflammable) [AEP model (Up to Serial No. 501,500)]
R309,312	⚠1-212-889-00	Ⓐ	220	¼W	fusible [AEP (Serial No. 501,501 and later), UK, E and Canadian model]
R401,451	1-244-825-11	Ⓐ	10	½W	arbon
R402,452	1-244-877-11	Ⓐ	1.5 k	½W	carbon
R403,453	1-244-873-11	Ⓐ	1 k	½W	carbon
R404,454	1-244-825-11	Ⓐ	10	½W	carbon
R405,455	1-244-865-11	Ⓐ	470	½W	carbon
RT201,251	1-224-647-XX	Ⓑ	47 k (B), adjustable; DC bias		
RT401,451	1-224-250-XX	Ⓑ	2.2 k (B), adjustable; meter level		
RV1,2	1-226-201-00	Ⓔ	100 k (A), variable; VOLUME		
RV201,251	1-226-215-00	Ⓓ	100 k (N/M), variable; BALANCE		
RV202,252	1-226-213-00	Ⓓ	100 k (special), variable; TREBLE		
RV203,253	1-226-214-00	Ⓓ	100 k (special), variable; BASS		

SWITCHES

S1	1-552-375-00	Ⓕ	Rotary Slide, FUNCTION
S2,3	1-552-373-11	Ⓔ	Rotary Slide, MONITOR, TAPE COPY
S4	1-552-374-00	Ⓔ	Rotary Slide, FILTER
S5	1-552-372-00	Ⓔ	Rotary Slide, SPEAKERS
S6	⚠1-552-018-12		Pushbutton, POWER [Canadian model]
S6	⚠1-552-206-11	Ⓓ	Pushbutton, POWER [AEP, UK, E model]

JACKS

J101–103 J151–153	1-507-430-XX	Ⓚ	Phono, 6p; PHONO, TUNER, AUX
J104,154 J105,155	1-507-433-21	Ⓓ	Phono, 4p; TAPE 1, REC OUT 1 [AEP, UK, E model]
J106–109 J156–159	1-507-429-XX		Phono, 8p; TAPE 1, TAPE 2, REC OUT 1, REC OUT 2 [Canadian model]

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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Note: Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.		Description
J401	1-507-561-00	C	Binaural, HEADPHONES

MISCELLANEOUS

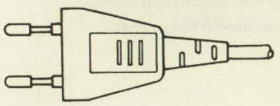
CNJ1	1-509-549-00	Ⓑ	Connector, REC/PB (TAPE 2) [AEP, UK, E model]
CNP2	⚠1-509-546-00	Ⓓ	Connector, 3p; ∿ AC IN [AEP, UK, E model]
CP001	⚠1-231-341-00		Encapsulated Component [Canadian model]
F201	⚠1-532-237-00	Ⓑ	Fuse, 3.15 A [AEP model (Up to Serial No. 501,500)]
F202	⚠1-532-078-00	Ⓑ	Fuse, 1 A [AEP model (Up to Serial No. 501,500)]
F401,402	⚠1-532-259-00	Ⓑ	Fuse, T1.6 A [AEP (Serial No. 501,501 and later), E and UK model]
F401	⚠1-532-403-XX		Fuse, 3.15 A [Canadian model]
F403	⚠1-532-078-00	Ⓑ	Fuse, T1 A [AEP (Serial No. 501,501 and later), E and UK model]
F403	⚠1-532-402-XX		Fuse, 1.25 A [Canadian model]
L401,451	1-420-838-00	Ⓑ	Coil, 1.22 μH
ME1,2	1-520-320-00	Ⓚ	Meter, including lamp
RY201	1-515-302-00	Ⓕ	Relay
T1	⚠1-446-051-00	Ⓠ	Transformer, power [AEP, UK model]
T1	⚠1-446-092-00		Transformer, power [Canadian model]
T1	⚠1-446-176-00		Transformer, power [E model]
TM101,102	1-536-524-00	Ⓒ	Terminal Strip, SPEAKER A, B
	⚠1-508-897-00		Plug, voltage selector [E model]
	1-518-309-00	Ⓒ	Lamp, included meter
	⚠1-526-574-00		AC outlet, 3p [Canadian model]
	⚠1-533-131-00	Ⓐ	Holder, fuse
	⚠1-534-986-XX		Cord, power [Canadian model]

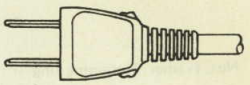
ACCESSORIES & PACKING MATERIALS

Part No.		Description
⚠1-534-819-00	Ⓗ	Cord, power [UK model]
⚠1-534-986-XX	Ⓓ	Cord, power; parallel-blade plug [E model]
⚠1-551-530-00	Ⓓ	Cord, power; euro-plug [E model]
3-701-020-00	Ⓑ	Bag, plastic; instruction manual
3-701-622-00		Bag, plastic [Canadian model]
3-770-455-11	Ⓔ	Manual, instruction [AEP, UK, E model]
3-770-455-31		Manual, instruction [Canadian model]
4-853-916-00	Ⓒ	Cushion [AEP, E, UK model]
4-854-329-00	Ⓔ	Carton [AEP, E, UK model]
4-854-330-00		Carton [Canadian model]
4-891-037-00	Ⓑ	Bag, plastic; unit
4-892-106-00		Cushion [Canadian model]

– Power Cord –

Euro-plug (1-551-530-00) **Parallel-blade plug (1-534-986-XX)**





Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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TA-F4A

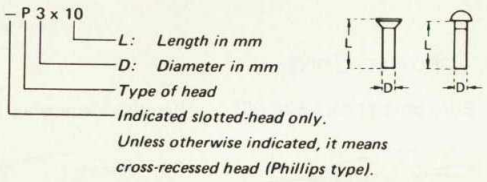
1/4 WATT CARBON RESISTORS Ⓐ

Note: Circled letter Ⓐ is applicable to European model only.

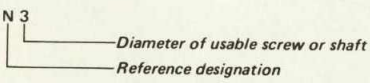
Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-244-601-11	10	1-244-625-11	100	1-244-649-11	1.0k	1-244-673-11	10k	1-244-697-11	100k	1-244-721-11	1.0M	1-244-745-11
1.1	1-244-602-11	11	1-244-626-11	110	1-244-650-11	1.1k	1-244-674-11	11k	1-244-698-11	110k	1-244-722-11	1.1M	1-244-746-11
1.2	1-244-603-11	12	1-244-627-11	120	1-244-651-11	1.2k	1-244-675-11	12k	1-244-699-11	120k	1-244-723-11	1.2M	1-244-747-11
1.3	1-244-604-11	13	1-244-628-11	130	1-244-652-11	1.3k	1-244-676-11	13k	1-244-700-11	130k	1-244-724-11	1.3M	1-244-748-11
1.5	1-244-605-11	15	1-244-629-11	150	1-244-653-11	1.5k	1-244-677-11	15k	1-244-701-11	150k	1-244-725-11	1.5M	1-244-749-11
1.6	1-244-606-11	16	1-244-630-11	160	1-244-654-11	1.6k	1-244-678-11	16k	1-244-702-11	160k	1-244-726-11	1.6M	1-244-750-11
1.8	1-244-607-11	18	1-244-631-11	180	1-244-655-11	1.8k	1-244-679-11	18k	1-244-703-11	180k	1-244-737-11	1.8M	1-244-751-11
2.0	1-244-608-11	20	1-244-632-11	200	1-244-656-11	2.0k	1-244-680-11	20k	1-244-704-11	200k	1-244-728-11	2.0M	1-244-752-11
2.2	1-244-609-11	22	1-244-633-11	220	1-244-657-11	2.2k	1-244-681-11	22k	1-244-705-11	220k	1-244-729-11	2.2M	1-244-753-11
2.4	1-244-610-11	24	1-244-634-11	240	1-244-658-11	2.4k	1-244-682-11	24k	1-244-706-11	240k	1-244-730-11	2.4M	1-244-754-11
2.7	1-244-611-11	27	1-244-635-11	270	1-244-659-11	2.7k	1-244-683-11	27k	1-244-707-11	270k	1-244-731-11	2.7M	1-244-755-11
3.0	1-244-612-11	30	1-244-636-11	300	1-244-660-11	3.0k	1-244-684-11	30k	1-244-708-11	300k	1-244-732-11	3.0M	1-244-756-11
3.3	1-244-613-11	33	1-244-637-11	330	1-244-661-11	3.3k	1-244-685-11	33k	1-244-709-11	330k	1-244-733-11	3.3M	1-244-757-11
3.6	1-244-614-11	36	1-244-638-11	360	1-244-662-11	3.6k	1-244-686-11	36k	1-244-710-11	360k	1-244-734-11	3.6M	1-244-758-11
3.9	1-244-615-11	39	1-244-639-11	390	1-244-663-11	3.9k	1-244-687-11	39k	1-244-711-11	390k	1-244-735-11	3.9M	1-244-759-11
4.3	1-244-616-11	43	1-244-640-11	430	1-244-664-11	4.3k	1-244-688-11	43k	1-244-712-11	430k	1-244-736-11	4.3M	1-244-760-11
4.7	1-244-617-11	47	1-244-641-11	470	1-244-665-11	4.7k	1-244-689-11	47k	1-244-713-11	470k	1-244-737-11	4.7M	1-244-761-11
5.1	1-244-618-11	51	1-244-642-11	510	1-244-666-11	5.1k	1-244-690-11	51k	1-244-714-11	510k	1-244-738-11	5.1M	1-244-762-11
5.6	1-244-619-11	56	1-244-643-11	560	1-244-667-11	5.6k	1-244-691-11	56k	1-244-715-11	560k	1-244-739-11		
6.2	1-244-620-11	62	1-244-644-11	620	1-244-668-11	6.2k	1-244-692-11	62k	1-244-716-11	620k	1-244-740-11		
6.8	1-244-621-11	68	1-244-645-11	680	1-244-669-11	6.8k	1-244-693-11	68k	1-244-717-11	680k	1-244-741-11		
7.5	1-244-622-11	75	1-244-646-11	750	1-244-670-11	7.5k	1-244-694-11	75k	1-244-718-11	750k	1-244-742-11		
8.2	1-244-623-11	82	1-244-647-11	820	1-244-671-11	8.2k	1-244-695-11	82k	1-244-719-11	820k	1-244-743-11		
9.1	1-244-624-11	91	1-244-648-11	910	1-244-672-11	9.1k	1-244-696-11	91k	1-244-720-11	910k	1-244-744-11		

HARDWARE NOMENCLATURE

Screw:



Nut, Washer, Retaining ring:



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

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